Amendment to the Claims:

The listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1-20. (Cancelled).

21. (Currently Amended) A method for analyzing a porous rock sample by measuring a wettability of ~~a~~ the porous rock sample in a presence of water and oil, comprising determining a water wet pore surface of the sample and an oil wet pore surface of the sample when the sample is saturated with water and oil, and calculating a wettability index from a combination of the water wet pore surface and the oil wet pore surface.

22. (Previously Presented) A method as claimed in claim 21, wherein the water wet pore surface and of the oil wet pore surface is determined when the sample is saturated with water and oil from measurements of relaxation times obtained from the surfaces of the sample placed in a nuclear magnetic resonance device.

23. (Previously Presented) A method as claimed in claim 21, wherein the wettability index is obtained by the relation :

$$I_{NMR} = \frac{SM_w - SM_o}{SM_w + SM_o}$$

where SM_w is the water wet pore surface and SM_o is the oil wet pore surface when the porous rock sample is saturated with water and oil.

24. (Previously Presented) A method as claimed in claim 21, wherein the wettability index is obtained by the relation :

$$I_{NMR} = \log_{10} \frac{SM_w}{SM_o}$$

where SM_w is the water wet pore surface and SM_o is the oil wet pore surface when the porous rock sample is saturated with water and oil.

25. (Previously Presented) A method as claimed in claim 22, wherein the wettability index is determined by the following operations :

a) measuring the relaxation times of the water-saturated sample;

b) measuring the relaxation times of the sample in the presence of oil and water, in a zone approaching saturation of the sample;

c) measuring the relaxation times of the water in the sample in the presence of oil, in a zone approaching residual saturation;

d) measuring relaxation times of the sample in a state of 100 % oil saturation; and

e) combining measurements of the relaxation times obtained from a) – d) so as to obtain the wettability index.

26. (Previously Presented) A method as claimed in claim 25, wherein the relaxation times of a) to c) are measured after subjecting the sample to centrifugation.

27. (Previously Presented) A method as claimed in claim 25, wherein the relaxation times are measured after forced displacement of the fluids in the sample placed in a containment cell.

28. (Previously Presented) A method as claimed in claim 21, wherein oil having an intrinsic relaxation time as great as possible and as close as possible to that of the water is selected.

29. (Previously Presented) A method as claimed in claim 25, wherein the relaxation times are those corresponding to either a saturation curves maxima, or to mean values of the curves.

30. (Previously Presented) A method as claimed in claim 22, wherein the wettability index is obtained by the relation :

$$I_{NMR} = \frac{SM_w - SM_o}{SM_w + SM_o}$$

where SM_w is the water wet pore surface and SM_o is the oil wet pore surface when the porous rock sample is saturated with water and oil.

31. (Previously Presented) A method as claimed in claim 22, characterized in that the wettability index is obtained by the relation :

$$I_{NMR} = \log_{10} \frac{SM_w}{SM_o}$$

where SM_w is the water wet pore surface and SM_o is the oil wet pore surface when the porous medium is saturated with water and oil.

32. (Previously Presented) A method as claimed in claim 23, wherein the wettability index is determined by the following operations :

a) measuring the relaxation times of the water-saturated sample;

b) measuring the relaxation times of the sample in the presence of oil and water, in a zone approaching saturation of the sample;

c) measuring the relaxation times of the water in the sample in the presence of oil, in a zone approaching residual saturation;

d) measuring relaxation times of the sample in a state of 100 % oil saturation; and

e) combining measurements of the relaxation times obtained from a) – d) so as to obtain the wettability index.

33. (Previously Presented) A method as claimed in claim 24, wherein the wettability index is determined by the following operations :

a) measuring the relaxation times of the water-saturated sample;

b) measuring the relaxation times of the sample in the presence of oil and water, in a zone approaching saturation of the sample;

c) measuring the relaxation times of the water in the sample in the presence of oil, in a zone approaching residual saturation;

d) measuring relaxation times of the sample in a state of 100 % oil saturation; and

e) combining measurements of the relaxation times obtained from a) – d) so as to obtain the wettability index.

34. (Previously Presented) A method as claimed in claim 22, wherein oil having an intrinsic relaxation time as great as possible and as close as possible to that of the water is selected.

35. (Previously Presented) A method as claimed in claim 23, wherein oil having an intrinsic relaxation time as great as possible and as close as possible to that of the water is selected.

36. (Previously Presented) A method as claimed in claim 24, wherein oil having an intrinsic relaxation time as great as possible and as close as possible to that of the water is selected.

37. (Previously Presented) A method as claimed in claim 25, wherein oil having an intrinsic relaxation time as great as possible and as close as possible to that of the water is selected.

38. (Previously Presented) A method as claimed in claim 26, wherein oil having an intrinsic relaxation time as great as possible and as close as possible to that of the water is selected.

39. (Previously Presented) A method as claimed in claim 27, wherein oil having an intrinsic relaxation time as great as possible and as close as possible to that of the water is selected.

40. (Previously Presented) A method as claimed in claim 30, wherein the wettability index is determined by the following operations :

a) measuring the relaxation times of the water-saturated sample;

b) measuring the relaxation times of the sample in the presence of oil and water, in a zone approaching saturation of the sample;

c) measuring the relaxation times of the water in the sample in the presence of oil, in a zone approaching residual saturation;

d) measuring relaxation times of the sample in a state of 100 % oil saturation; and

e) combining measurements of the relaxation times obtained from a) – d) so as to obtain the wettability index.

41. (Previously Presented) A method as claimed in claim 31, wherein the wettability index is determined by the following operations :

a) measuring the relaxation times of the water-saturated sample;

b) measuring the relaxation times of the sample in the presence of oil and water, in a zone approaching saturation of the sample;

c) measuring the relaxation times of the water in the sample in the presence of oil, in a zone approaching residual saturation;

d) measuring relaxation times of the sample in a state of 100 % oil saturation; and

e) combining measurements of the relaxation times obtained from a) – d) so as to obtain the wettability index.

42. (New) A method as claimed in claim 21, wherein the porous rock sample is obtained from an underground formation containing an effluent; and further comprising:

determining a fluid suited for effluent displacement from the analyzing of the porous rock sample; and

using the fluid suited for effluent displacement to provide enhanced recovery of the effluent from the formation by effluent displacement.

43. (New) A method as claimed in claim 21, wherein the porous rock sample is obtained from an underground formation; and further comprising:

evaluating a degree of pollution of the formation from the analyzing of the porous rock sample.

44. (New) A method as claimed in claim 21 wherein the porous rock sample is a building material; and further comprising:

using the analysis of the porous rock sample to determine a waterproofing treatment using the porous rock sample.